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Communications.

Researches on the Medical Properties and Applications of PROTOXIDE OF NITROGEN, NITROUS OXIDE OR LAUGHING GAS.

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IV. Preparation and Combinations of Nitrous Oxide.

Concluded from Vol. XII., p. 274.

There are several methods of obtaining protoxide of nitrogen, which are well known to chemists, and described in the general works on chemistry, but perhaps the simplest and best plan is by the decomposition with heat of nitrate of ammonia. The necessary apparatus for its production and preservation consists of a generator, purifier, and receiver, which should be of glass, or other nonoxidizable substance, though the first may be of iron, the second of wood or some metal properly protected or capable of resisting the action of the agents employed, and the third of the same, or better still, of India rubber or gutta percha, where the gas is not required to be kept for any great length of time. The requisite heat may be obtained from various sources and be placed in direct or intermediate contact with the retort. For the production of a moderate quantity of nitrous oxide a sufficiency will be furnished by an ordinary alcohol or other lamp with one or more large wicks, but for its free and rapid evolution it is better—as in fact it is in all cases—to apply the heat through the medium of a sand bath, which regulates and distributes the temperature so equably as to diminish the danger of injury to the apparatus or the production of contaminating substances, for if too suddenly or intensely applied it is apt to fracture or explode the retort, unless composed of some strong material like metal, as well as to cause the generation of noxious matters.

Nitrate of ammonia is decomposed at a temperature of between 400° and 500° F., but if the heat be too great this salt will be volatilized and wasted, as will be indicated by the appearance of a white cloud instead of a colorless gas, or its decomposition will be attended by the formation of such objectionable compounds as nitric oxide and hyponitrous acid, either of which will, of course, necessitate the reduction of heat and careful purification. The retort should have a stopper, or be so connected with the purifier as to be readily separated therefrom, in order to speedily equalize the atmospheric pressure when the heat is undue or is withdrawn, and thus prevent destruction or flooding of the former by the forcible reflow of liquid from the latter.

When pure, *cæteris paribus*, nitrate of ammonia is resolved into protoxide of nitrogen and water, but as it is sometimes adulterated, besides the deleterious agents mentioned, other impurities may be given off, such as nitric acid and chlorine. For ordinary purposes nitrous oxide may be sufficiently freed from extraneous matter by passing it through water, with a large quantity of which, however, unless it is quite warm, it should not be allowed to remain long in contact if its economical preservation is of much moment, as this liquid will when cold absorb a volume of the gas nearly equal to its own bulk, though this may be readily recovered by simply heating the water. But as for medical purposes it is generally desirable to have protoxide of nitrogen quite free from contaminations, it is necessary to adopt such measures as will insure its purification, which may be effected in the following manner: The retort containing the nitrate of ammonia, should preferably be of glass, and be connected by means of glass or other tubes of nonoxidizable matter joined by cement, India rubber, gutta percha, or some similar substance, with three glass vessels, such as Wolf's bottles, conjoined in like manner. These last should be partially filled with the following fluids, viz., the first one with a saturate solution of protosulphate of iron, the second the same of caustic potash or soda, and the third with plain water. The connecting tubes, or those passing into the purifiers on the side toward the retort should be immersed into these respective liquids nearly to the bottom of the vessel, but those on the side

furthest therefrom should have their orifices above the liquid and close to the mouth of the bottle, which should be sufficiently capacious to admit of the insertion of a large stopper or cork containing the tubes of the greatest calibre that can be introduced. As nitrous oxide is generated it is compelled to thus pass through these different liquids which remove all adventitious matter and render it quite pure. This purified protoxide of nitrogen may then, as it comes over, be collected in suitable receivers, and be thus preserved for immediate use in its gaseous state, or, like carbonic acid, it may be introduced into some liquid which will take it up more or less freely, and for obvious reasons the fluid most convenient and useful for such purpose is water. Yet as water will not of itself absorb a sufficiently large quantity of nitrous oxide to render it very efficient for medical purposes, it is necessary to forcibly condense the gas therein, which should be continued until it is completely surcharged therewith, or to the extent at least of five volumes of the latter to one of the former, as it is not always desirable to administer much water, though frequently in this connection it offers no very serious objection, but, on the contrary, its free use is often therapeutically indicated, while at the same time it is always more or less essential as a diluent. The relative proportion of these two compounds will therefore vary according to the special necessities of the case, the degree of admixture depending upon the practical application, although the portability and eligibility of this preparation will be measurably increased by the maximum quantity of gas to the minimum of liquid. In view of the fact, however, that nitrous oxide gas will undergo liquefaction under a comparatively moderate pressure, it is highly probable that when thus forcibly introduced to any great extent into such fluids as water, it may be condensed into a liquid, and be mechanically associated if not chemically combined therewith, as these two bodies seem to have a strong affinity for each other, for I have known this nitrous oxide water kept in an ordinary bottle with a plain cork tied down, to preserve its active medicinal properties for the long period of about seven years. Protoxide of nitrogen may also be sometimes advantageously associated with alcoholic and other liquids for therapeutic purposes. But as the process for the separate liquefaction and solidification of nitrous oxide is being rapidly perfected, the necessity for the primary condensation with such fluids is diminishing; still as the former is more difficult than the latter, and in consequence of the extremely important practical advantages of this agent for medical purposes, its ready acquisition is a great desideratum, it is hoped that both methods will be so fully adopted as to promptly furnish all that may be required.

V. Modes of Administration and Dose of Nitrous Oxide.

Protoxide of nitrogen may be administered with advantage either in its gaseous state by the lungs, or in association with liquids through this and other channels. Thus for instance, it may be introduced within the body in the æriform state, separately or in conjunction with aqueous and other vapors, by direct inhalation or artificial insufflation through the air passages, and in combination with water or other liquids through the alimentary canal by voluntary deglutition or the extraneous method of injection into the stomach and rectum. Also to some extent through the cutaneous surface. Either one or more of these modes of administration may be resorted to advantageously, according to the necessities of the particular condition requiring treatment, though in states of unconsciousness, and inability to inspire or swallow, as well as in cases of obstinate refusal to otherwise take it when needful, the artificial introduction of this agent may be the only alternative.

The effects of nitrous oxide, both in the form of gas by the pulmonary organs and in connection with liquids by the alimentary canal, are in general the same, though in the latter state and mode of exhibition, it sometimes seems to exert a more immediate and specific influence upon the chylopoietic viscera and genito-urinary organs, than when taken in the gaseous condition through the air-passages. In depressed cases, as of asphyxiation, suspended animation, or intoxication from various poisons, even when so profound as to temporarily place in abeyance the functions of deglutition, respiration, circulation, and innervation, the surcharged nitrous oxide water, and doubtless also other liquid preparations, may be injected into the bowels with such decided benefit as to sometimes induce speedy recovery, and always, so far as my experience goes, with a certain degree of advantage. Nitrous oxide may likewise be frequently administered with benefit in conjunction with wine and other alcoholic fluids.

This oxygenated liquid is a very convenient and valuable preparation, as it favors the more general distribution and application of its active ingredient, protoxide of nitrogen. When well made, nitrous oxide water is rather lively and

sparkling, having a somewhat sweetish insipid taste, but with the addition of aromatic or other agreeable compatible substances it forms quite a palatable beverage. In view of this fact and the peculiarly pleasant as well as invigorant action of protoxide of nitrogen, this aqueous preparation will no doubt prove a valuable substitute for the various alcoholic and other objectionable compounds so freely employed for stimulating purposes. Hence in this connection, nitrous oxide water is of especial interest, as it will have a tendency to diminish the use of intoxicating liquors and the evils connected therewith. This oxygenated liquid will doubtless thus prove extremely useful in substituting a decidedly agreeable and highly sanitive for a positively injurious and destructive agent, as it will frequently promptly allay thirst and effectually satisfy the craving for some stimulus, without like alcohol either poisoning the body, stupefying the mind, or degrading the nature of those who use it. As before indicated, however, the salutary effects of nitrous oxide are not exclusively limited to the preceding, being moreover powerfully antagonistic to the deleterious effects of such agents, and thus quite active in the opposite direction, with perhaps one exception, for when taken too freely it is apt to unduly excite the sexual appetite, and thus indirectly encourage vicious practices, though even in this respect it is less obnoxious than alcoholic liquors, for unlike them it does not infuriate the passions and at the same time deaden the moral sensibilities, but while increasing erotic desire, also intensifies physical and mental energy, thereby augmenting instead of diminishing the power of resistance to immoral courses.

The *dose* of protoxide of nitrogen necessarily depends upon the varied circumstances of race, age, sex, constitution, temperament, idiosyncrasy, and special application, as well as the type, stage, intensity, and complications of the particular disorder requiring treatment. Thus, for instance, as a general rule, persons of a lymphatic, can bear larger quantities than those of a sanguine or bilious temperament; and these latter more than the nervous—these being frequently very susceptible to its excitant influence. Besides, as with most other agents, males will usually require more than females, adults than youths, and these again more than children. Hence the quantity of nitrous oxide gas which may be exhibited at any one time, will vary from a very small to a comparatively large volume; as, for example, from one pint or less to several gallons, according to special indications and capacities, while that of the surcharged water ranges from one fluid drachm to one-half pint or more—repeated as often as may be necessary to produce the desired effect. The best plan, in ordinary cases, is to commence with a minimum, or what appears to be a suitable quantity for the case under treatment, and gradually or rapidly increase, until its action is manifest, or the required result is obtained, and continue according to circumstances, unless in conditions of extreme danger, when it may be freely employed without hesitation; for the necessity for stimulus is at such times generally so great, and the tolerance usually so much increased, as to render any apprehended evil from a liberal use of minor importance.

For the production of anæsthesia, however, some risk must always be run, as a comparatively large quantity will be required to be quickly administered; usually from one to three or more gallons of the gas, which should be repeated or its inhalation continued at short intervals, when a somewhat prolonged anæsthetic condition is required.

In thus enforcing the necessity for care in the use of nitrous oxide, it is not intended to excite undue apprehension respecting its dangerous tendencies, but merely to guard against overweening confidence in its harmlessness; for though ordinarily quite safe, it is yet sufficiently potent to do great injury to the vital economy, even to the speedy destruction of life. Hence, under no circumstances should such an active agent be carelessly exhibited; for while in general the influence of protoxide of nitrogen is very agreeable, invigorating, and innoxious, yet as it is powerfully stimulant, with, as before mentioned, a special tendency to the blood, brain, nervous, vascular, and nutritive systems, as well as to the genito-urinary organs, its indiscriminate and disproportionate employment is to be avoided, as it may prove injurious by superoxidation, overstimulation, and otherwise in the manner previously indicated.

Moreover, besides the immediate evils which may thus result from the rapid exhibition of a large quantity of nitrous oxide, there are others which follow its prolonged and inordinate use. Thus if taken too freely for any length of time it will cause undue molecular metamorphosis, with excessive disintegration of structure and emaciation of body, with abnormal excitability of kidneys, bowels, brain, and nervous system, unattended however, unless in extreme cases, with any direct manifestation of weakness or debility but rather with a restless energy tending to vital exhaustion from the superabundant consumption of the material elements and dynamic power of the or-

ganism. Nevertheless though ordinarily, thus objectionable in immoderate quantities, yet when used discriminately even to the extent of causing somewhat extreme disintegration of tissue and superexcitability, this agent will not usually produce so much waste or irritability of system as to prove injurious, but on the contrary by increasing the activity and augmenting the power of molecular and somatic life be often very efficient in improving the tone of both body and mind. Hence as before stated, in those cases of obesity and other forms of abnormal nutrition, as well as in the many aberrations of function in which modified metamorphosis and increased disintegration with general invigoration is required, nitrous oxide offers *cæteris paribus* the most reliable means for the purpose, as it will not only reduce redundancy of flesh and regulate organic action, but will increase dynamization and promote thereby the health and strength of the entire economy both corporeally and psychically.

With regard to any absence of detail or deficiency of cases in illustration of the correctness of the foregoing observations it is proper to state in conclusion, that in this paper I have mainly endeavored to give a very general outline of the chemical constitution and properties, physiological influences, and modes of preparation, combination, and administration of protoxide of nitrogen, and to point out some of its principle hygienic, therapeutic, revivifying, antidotal and anæsthetic applications, hoping at a future time to be able to communicate more fully on the subject. Hence notwithstanding the preceding remarks might be greatly extended, I believe I have presented enough to exhibit the superior sanitive power of nitrous oxide and demonstrate its great practical value in the support of life action. In consequence therefore, of its pre-eminent importance to the medical profession and humanity at large, it is hoped these general observations will attract the favorable attention of scientists to the transcendent merits of this remarkable agent, and thereby aid in extending its application for the preservation of life, diminution of suffering, and the promotion of health and happiness.

A CASE OF VESICO-RECTAL FISTULA, From a Tuberculous Sloughing of the Prostate Gland.

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As the tuberculous affection of the urinary organs occurs so seldom, it does not seem to me superfluous to mention the following case which I saw last winter (1863–64) in the Clinic of Professor B. Langenbeck, at Berlin, Prussia; more particularly as all abnormal communications between the rectum and bladder, prostate or urethra, are of great interest in the field of surgery.

The patient, H—— S——, from Zelle, by trade a blacksmith, descended, according to his report, from a healthy family, in which tuberculous affections were never known. He, however, has suffered since his twelfth year from an affection of the breast, and from time to time complained of severe cough; often the sputa was mixed with blood; still with but little intermission he could work at his trade, although having had several hæmorrhages from the lungs.

In his sixteenth year he found that at different times, in periods of several months, the urine passed off unnoticed; more particularly at night. When awake, he was in the habit of holding his urine until the bladder was so full that it would not retain it any longer, which he believed was the cause of the nightly flowing.

In his twenty-ninth year, after a coitus a gonorrhœa set in, which by the use of Balsam Copaivæ was removed in eight days. In the spring of 1863, the uncontrolable dropping of the urine commenced again, without any noticeable cause, and at the same time the patient observed that urine passed off from the rectum in defecation. This all seemed to remedy itself in a short time. But in the fall of 1863 it again set in with renewed severity, and continued increasing until taken into the Clinic a month or two later.

The patient, thirty-two years old, an individual of medium size, weak constitution, and considerbly emaciated. His skin had a sallow and withered look, the expression of his face was dull and stupid, and it was with great trouble that any answer could be gotten from him. The pulse was small, hardly felt, one hundred and twenty beats in the minute, appetite good, sleep in the night mostly undisturbed. His thorax was of small measure and much flattened; by percussion, the upper lobes of both lungs gave a dull thickened sound, and by auscultation a bronchial breathing was heard, so that in these places it was determined there were tuberculous deposits. This idea was also sustained by the sputa, although there was no blood mixed with it in the later period. The patient complained greatly of pain in the region of the bladder, particularly when urinating; a large amount of urine passed at the same time with the fæces

through the rectum, but in smaller quantity and shorter interims, and with greater pain through the urethra. The stream would pass through the urethra accompanied by wind with a rolling rumbling sound; could, however, be retained by the patient when desired. That passing through the urethra was clouded, reacted alkaline, and contained a voluminous precipitate of pus corpuscles and epithelial cells with crystals of phosphate of ammonia and magnesia. Often there was blood or finely divided particles of fæcal matter found therein. Albumen in large quantity was there, but no sugar.

By the digital examination in the rectum, as well as by the silver charaeter in the urethra, an openmg was found about one inch and a half from the anus on the anterior wall of the rectum, through which the catheter in the urethra could easily be felt. The perforation was about the size of a half dime and of oval form; the edges of which were soft; nowhere in the region of the hole was any hardening of the tissue felt. It was much easier to pass the catheter through the fistula into the rectum than into the bladder; and to suceeed in the latter, it was necessary to raise the point of the same well up when it would slide in without any difficulty. In the region of the perforation no prostate could be felt, but could easily distinguish whether the catheter was lying over or under the fistula close over the skin of the rectum. The examination was very painful to the patient; still by carefully and delicately using the catheter no bleeding was caused. Nothing anomalous was noticed on the testicles or spermatic cords.

With consideration upon the general condition of the patient, more particularly on his lung affection, the diagnosis of a destruction of the prostate and the surrounding tissue by tuberculous sloughing was determined, and therefore would not allow of an operation. The treatment was only palliative, and tended to render the suffering of the patient as light as possible. Fourteen days after his entrance into the clinic, he died of marasmus, without any particular change in his condition.

By the post-mortem, which took place 24 hours after death, the upper lobes of both lungs, and more particularly the right, were found completely infiltrated with tubercles, and here and there in the latter were caverns to be found not quite the size of a pigeon's egg.

The heart was normal, also the liver, spleen, inguinal lymphatics, the right kidney, suprarenal capsule and ureter; but these organs were all somewhat bloodless. The brain and spinal cord were not examined.

The suprarenal capsule of the left side was much enlarged, also the kidney, it measuring in length $5\frac{1}{2}$, breadth $2\frac{1}{2}$, and thickness $1\frac{3}{4}$ inches. The fibrous capsule being removed, the surface was flat, smooth and shining. But on the anterior and upper part, a quantity of granules was found, which in part arose above the level of the surface; they were circumscribed, the size of millet-seed, firm, with very little inflamed tissue around them, and they showed by microscopical examination to be miliary tubercles. The cortical substance was clouded, swollen, and somewhat hyperæmic. A few large tubercles were found in the extreme upper point. The medullary substance in the neighborhood of the pelvis was hyperæmic, infiltrated, yellow, and in great part soft and destroyed, so that the enlarged pelvis formed one large sac with irregular caverns, filled with clouded urine and cheesy detritus. The diameter of the ureter of this pelvis was four times the size of the other, the mucous membrane thickened, yellow and hard. The bladder was little extended, and contained about 2 oz. of a clouded fluid, the mucous membrane was hypertrophied and completely degenerated, of dirty gray color, and rough surface; likewise was the muscular structure much changed; particularly advanced was the degeneration at the neck of the bladder, which extended from here out in the pars prostatica urethræ. On both places considerable defect was found, not only in the mucous membrane, but also in the deep leading tissues, which extended on the musculus sphincter vesicæ, and prostata. On the latter were large abscess holes filled with detritus, communicating with the neck of the bladder and the pars prostatica urethræ by several openings, and extended up between the posterior wall of the bladder and the rectum close to the peritoneum. On the other side the degeneration had extended deeper, and perforated into the rectum. The surrounding tissue of the fistula was soft, and in the neighborhood extended considerable hyperæmia, but not a trace of miliary tubercle was to be found, nor was any such distinguished in the intestinal canal. But in the mucous membrane of the pars membranacea urethræ, and in the pars cavernosa an innumerable number of miliary tubercles were found, which extended to the orificium urethræ cutaneum. The destruction by them was not great, and nowhere extended deeper than through the mucous membrane.

Viewing the results of the post-mortem and the course of the disease, it can hardly be doubted

that the tubercles in the lungs was the primary affection, which in the later course of the disease affected the urinary organs. This commenced with the degeneration of the prostate and the bladder, and probably in his 16th year, at which time he first complained of inability to retain his urine. Still the process at this time was not much extended, at it passed off without remedies. It was impossible to ascertain from the somewhat stupid patient, if the condition of the urine was changed at that time. The Gonorrhœa, which came thirteen years later, and healed in a short time, could hardly be taken as the cause of the disease, but could have aroused and regenerated the quietly resting process which had been there so long.

The complaint which broke out anew in the spring of 1863, was little noticed by the patient, although urine passed out with the fæces. The so far advanced degeneration must have caused a perforation at this time, which soon disappeared, although it was probably the mucous membrane which folded like a valve over the as yet small opening and closed the communication.

In the fall of the year the complaint returned with greater severity, and he was obliged for the first time to seek medical aid. It is remarkable how the elastic and pliable mucous membrane of the rectum could be perforated, and the pus not have worked its way around the same outward to the perinæum. We must well consider that the already long continued inflammation was increased by the pressing fæcal matter, which caused a consolidation of the rectum and walls of the abscess before the perforation took place.

The tubercles which originated in the region of the prostate and neck of the bladder, extended not only to the rectum, but on both sides along the ureters, and more particularly over the bladder up to the left kidney, while the right kidney and its ureter was completely exempt. The disease in the bladder, ureter, and kidney pelvis, was so advanced that it must have existed for some time, while the cortical substance of the kidney must have been lately attacked, as fresh miliary tubercles were to be seen therein. It was the same way in the urethra, more especially on the forward part, where it was limited to the mucous membrane in the form of miliary tubercles and the nearer we came to the fossa navicularis, the less and smaller they were.

At all events the whole process was a chronic one, which, with but little complaining, continued sixteen years, and the patient at last only under the appearance of marasmus, died; which was caused in great part by the tubercles of the lungs.

Hospital Reports.

Philadelphia Hospital,
January, 1865.

Medical Clinic of Dr. J. M. Da Costa.

Reported by W. H. Ford, M. D., Resident Physician.

Rheumatic Gout.

J. H., æt. 54. He has been subject to occasional attacks of rheumatism for fifteen years. It usually affected the larger joints and was metastatic. Excepting this affection his general health has been good. About four days ago he first complained of pain in his left ankle. There was swelling without edema, slight discoloration, and pain, especially when the joint was moved. He had a coated tongue, dry skin, and but slight fever. In examining the joint we detect an effusion into its capsule, but none around the joint. There is heat, discoloration and tenderness, which indicate inflammatory action. The patient's tongue is still somewhat coated. He has a dry skin, and a remarkable absence of fever. This is a case of rheumatic gout, so called because it seems to be a blending of the two diseases, rheumatism and gout. It affects both the large and small joints, and causes an effusion within the capsule of the joint and not about it. It is often followed by permanent alterations of the structure and by deformity of the joint.

Treatment. Locally, apply warm lead-water and laudanum, or poultices, or even blisters if the affection is obstinate. If the inflammation still lingers, benefit may be derived from an ointment composed of equal parts of iodine and belladonna ointments. It may become necessary to leech the joint. Internally, the use of the alkaline treatment is of no advantage. The best results will be derived from the use of quinia and the acetic extract of colchicum combined, and often of the iodide of potassium.

He was ordered,

℞. Quiniæ sulph., gr. ij,
Extr. colch. acetic. gr. ¼ M.
S. Three times daily.

Also moderate nourishment, consisting of broths, arrowroot, rice, etc. No stimulants allowed. The bowels are to be kept soluble by the occasional administration of a blue pill, followed by a saline aperient.

On January 14th, the patient was brought before the class almost entirely well. He was

able to walk, and had but little pain in the ankle. The fluid had been gradually absorbed, so that there was then very little swelling. The local treatment was discontinued, but the internal treatment was not to be interfered with for a few days.

Rheumatic Gout of a Subacute character.

M. D., æt. 38. Was admitted January 7th, 1865. His present sickness commenced last November. The larger joints of the upper extremities are swollen, partially reddened, and painful on motion. The smaller joints are not affected. The lower extremities show no signs of swelling. His tongue is coated; bowels regular; pulse of moderate volume, and beats ninety-six times in the minute. There is a slight valvular murmur, though the heart is not irregular in its action. This is a case of rheumatic gout of a subacute character, which has existed for several months; and it shows how joints may be crippled by this disease.

Treatment. Colchicum, quinia, and warm fomentations will not be so useful as in the preceding case. In these more chronic cases we will derive better results from the combination of the iodide of potassium and the tincture of colchicum.

He was ordered of the Iodide of potassium, gr. viij., and of Tincture of colchicum, gtt. xv., three times a day. Also nutritous diet, consisting of broths, rice, with a small allowance of meat and vegetables. Locally passive motion was to be instituted with a view of preventing anchylosis, which might result from deposits in the joints, and from thickening of the implicated tissues. The ammonia liniment was also to be applied.

Should this treatment fail, then we are to resort to sulphur baths and lemon juice, given in half-ounce doses three times a day. This treatment has often proved successful when all other remedies have failed. It is very essential to keep the digestive organs in a good condition.

Typhoid Fever.

W. D., æt. 39, was admitted December 29th, 1864. He was taken sick about three days before his admission with a chill, vomiting, and pain in the back. For three weeks previous to the inception of this attack he had been drinking to excess.

On examination the following characteristics presented themselves:—tongue, dry, red at its tips, but coated in the centre; eyes, dull; pulse, weak and frequent, having ninety-four beats in the minute.

Abdominal Symptoms.—Diarrhœa, pain on pressure in both iliac fossæ, slight tympanitis, few rose-colored spots distributed over the abdomen and lower part of the chest, which disappeared on pressure.

Thoracic Symptoms.—Feeble breathing, dry cough, dullness on the right side, want of force about the first sound of the heart.

Cerebral Symptoms.—Partial stupor, wild muttering delirium, and carphologia. This is a good example of typhoid fever, which has a few peculiarities of decided interest.

1st. The almost entire extinction of the first sound of the heart. This is moderately frequent in low fevers, and is a sign of depression. Its therapeutical indication is stimulation.

2d. Imperfect resonance on perecussion and feeble breathing, the result of congestion of the lungs; hence, the cough. There is no inflammation, but these symptoms demand careful watching, lest the condition which they represent may prevent the proper æration of the blood, or terminate in pneumonia.

3d. Early delirium, which is an unfavorable symptom. It points to an examination of the urine for albumen and salts, connected with diseased action of the kidneys, which often produces delirium.

Treatment. He was ordered a fluid ounce and a half of punch (made of equal parts of whisky and milk) every hour, and two fluid ounces of beef essence every two hours. The patient had been taking twelve drops of the oil of turpentine every three hours, and one grain of quinia every two hours: this was continued. There were but three alvine evacuations daily, and therefore it was not deemed necessary to check them. A too loose condition of the bowels was to be checked by the use of opium suppositories or laudanum injections. Turpentine stupes were ordered to be applied to the right side of the chest two or three times daily, and allowed to remain at each application long enough to redden the skin.

The patient's position must be changed occasionally, in order to prevent mechanical congestion. It is not well to multiply remedies, but the brain symptoms may require special treatment. For the delirium we may use the following formula:

℞. Chloroformi purificat. ℥j.
Alcoholis, ℥xiv. M.
S. Teaspoonful every two hours.

This is similar to chloric ether, which has so much favor among English and Irish physicians.

On January 14th, he was presented convalescent. Great care must still be exercised about

his diet, as any slight imprudence in eating may occasion serious consequences.

Philadelphia Hospital,
January, 1865.

Surgical Clinic of Prof. S. D. Gross.

Reported by W. H. Wallace, M. D., Resident Physician.

Tertiary Syphilis, Orchitis, Nodes, Eruption, etc.

A. S. S., in 1851, had a chancre, which healed in four days, and was followed by a suppurating bubo in each groin. Four weeks later he had a sore throat, and in about two weeks after, an eruption appeared on the skin in various parts of his body.

During the last four years he has suffered from tertiary symptoms. One of these is rapid, a superficial ulceration of irregular shape, and covered with scabs.

He now has, too, an abscess or node on the scalp, which fluctuates, and the finger on pressure sinks into the bone. This is owing to an ulceration of the bone, the ulcer probably extending down to the dura mater. Several scars upon his forehead indicate the position of previous exfoliation of the bone. The patient is much troubled with pains in his bones, which are worse at night when he becomes warm in bed. There is some hypertrophy of the bones of the leg. One testicle is also affected by the disease, constituting syphilitic orchitis, which is now of four years standing. It involves not merely the epididymis but also the substance of the testicle itself.

If the disease be not arrested, the parenchymatous, or more properly, the tubular structure is removed and replaced by fibroid tissue, and the patient is then impotent. Sometimes ulceration takes place, with the protrusion of a fungous mass, composed of the semeniferous tubules. This man's sleep is much disturbed by the nocturnal pains, but his appetite is pretty good, and bowels regular.

In the treatment of these affections the great remedy is iodide of potassium, but in combination with mercury it is much more efficient. The bichloride is the best form, as it can be given in small doses and rarely salivates. The dose of the bichloride is one-sixteenth to one-twelfth to one-tenth grains, of the iodide of potassium from five to thirty grains. A good average is eight grains iodide of potassium with one-tenth grain of bichloride of mercury in mucilage, three times daily, always allowing an intermission after the remedy has been given for a week or ten days.

Other remedies have enjoyed great reputation in the treatment of this disease, one of which is the iodide of ammonium in the same doses as the potassium salt, but it is disagreeable to the taste, and does not agree well with the stomach; this latter, however, can be remedied by combination with paregoric.

Bromide of potassium has also been used, but is not so good as the iodide.

Iodide of sodium has for some time been used in Italy and some other parts of Europe, but has not been generally introduced into this country. This salt will be used in the treatment of the present case; ten grains with one-tenth grain of bichloride of mercury, dissolved in water, will be given three times a day, and we may expect a decided amelioration of the symptoms, particularly of the nocturnal pains, in the course of a few days. An ointment composed of one part of red precipitate ointment to three of simple cerate will be applied to the sores. The node will not be interfered with; the remedies ordered will promote its absorption, which, however, may be assisted by the local application of tincture of iodine.

The patient will be kept on plain diet, with an occasional laxative.

Frost-bite.

T. A. R., a sailor, has been exposed to cold and wet, having had his stockings frozen to his feet, and is now suffering from frost-bite.

Wet cold is much more likely to produce bad consequences than dry, and the remote portions of the body, as the extremities, are most likely to suffer.

In this case the toes having mortified, have been separated by ulceration, leaving a granulating surface; the feet are swollen, discharging an offensive purulent liquid.

The edema is owing to serum infiltrated into the tissues, and is distinguished from an effusion of lymph, by pitting on pressure, which the latter does not.

Lymph effused in cases like the present, is generally aplastic.

The patient has no fever; his bowels are regular, and his pulse small and weak.

The treatment will consist in giving him good diet, with milk punch, and the tinctura ferri chloridi, with an anodyne at night, consisting of Pulv. Doveri gr. x., with Pulv. opii, gr. j. Locally there will be applied, Unguent. hydrarg. nitrat., diluted with four times the quantity of simple cerate, with the addition of opium, and the surrounding parts will be painted with dilute tincture of iodine.

N. J. G., a colored woman, aged 24 years, laid in a cold attic with wet stockings, and in consequence had her feet frozen. The feet are now mortified, cold and crepitating on pressure, from the gases produced by decomposition, and nature is effecting a separation of the diseased masses, the "line of demarkation" being well shown, as a ring of vesicles, filled with turbid fluid, which bursting, show underneath a red line of granulations.

The patient at present is in pretty good condition, with a disposition to constipation, which is a good sign.

The treatment will be good diet, with quinine and iron, and milk punch, alcohol being the best stimulant.

A good anodyne will be given at night, and an ointment composed of opium ʒss., simple cerate ℥j., applied to the parts.

Stiff Knee.

J. K., æt. 45 years, of temperate habits. This man has a stiff knee, which is enlarged, and gives a sense of fluctuation; he has never had rheumatism. This condition of things may have been produced by many causes. There is now inflammation of the synovial membrane, with changes in the articular cartilages and heads of the bones, and it is probable that the ligaments and other parts of the joint have suffered. He will be treated constitutionally, by bromide of potassium and bichloride of mercury, and straps of ammoniac and mercury plaster will be firmly applied around the knee.

Soft Chancre.

This man, aged thirty years, has four sores on the end of his penis, complicated by phymosis. He has no bubo, and has never had any eruption or sore throat, although the disease was contracted six months ago. The ulcers are small, but the attendant inflammation is considerable, and the patient has painful erections of the penis at night.

Solution of acetate of lead and opium will be applied until the inflammation is subdued, when a stimulating ointment will be used. To relieve the erections, morphia and tartar emetic will be given at night.

Mercury is not necessary in this case, being only required in hard chancre.

Elephantiasis.

This colored man is a native of Pennsylvania, and has been for fourteen years troubled with a form of elephantiasis of the feet.

The disease is most common in tropical countries, being sometimes much more severe than in the present case, and coexisting with hypertrophy of the scrotum and prepuce.

In this case it is confined to the legs, is attended with but little pain and slight itching.

The disease is an hypertrophy of the skin and cellular tissue, extending to the fibrous structures.

In the earlier stages of the disease astringents may be of service, as will also the ointment of iodide of mercury. At a later period the disease is incurable. Mercury internally will sometimes be found beneficial, and firm compression with a bandage, persistently used, may be tried.

The femoral artery has been ligated in hope of curing this disease, but in view of the rapidity with which the circulation is re-established through collateral vessels, we need not expect much benefit from this plan.

Editorial Department.

Periscope.

Virchow and the Cellular Pathology.

A correspondent of the *Edinburgh Medical Journal* remarks, that perhaps the most remarkable thing he has recently observed in Berlin, is a recent change in Virchow's opinion regarding the cell theory. This change has been caused by the discoveries of Recklinghausen (Virchow's *Archives*, about a year ago) in the cornea. He has shown that the corneal cells have not special cell-walls, but are merely *spaces* between masses of intercellular substances. The nuclei in the angles he therefore considers *free;* and he says that many of them can move along the canaliculi from one angle to another. Moreover, he says that the interior of these canals is continuous with that of the lymphatics; you can inject the lymphatics from them; so that, according to him, the origin of the lymphatics is to be found in the canaliculi of the so-called connective-tissue corpuscles. Then he says that the corpuscles of tendon and connective tissue are merely spaces with contained nuclei—a view which, of course, is *not new* to an Edinburgh man. Virchow admits all this; he admits that the corneal corpuscles are not cells. He seems rather reluctant to admit that those of tendon and connective tissue are the same, but he does not deny it; and he told me personally that he *now did not regard a cell-wall as an "essential part of the cell,"* as stated in *Cellular Pathology;* but that a nucleus surrounded by a molecular blastema was sufficient to constitute a cell:

then he says that the outer part of this cell-blastema consolidates and forms a cell-wall, as Beale has shown; and that this takes place in the amoeba when placed in fresh water. This, of course, is a great triumph for Goodsir, who long ago was cautious enough not to say that the cell-wall is always present.

Powdered Alum in Chronic Catarrh of the Auditory Meatus and Tympanum.

According to the statement of M. Himlin, in the *Medical Times and Gazette*, the application of powdered alum by insufflation, will be found very effective in certain forms of chronic catarrhal inflammation of the meatus and tympanum, which are otherwise often tedious in yielding to treatment. When there exists a red and granular condition of the membrana tympani, with or without the minute polypi, such as often last from childhood to an advanced period in life, the use of the remedy will be especially suitable after all the more acute symptoms have subsided. The alum is readily introduced by a moistened camel's hair brush, or it may be blown into the meatus through a piece of India-rubber tubing. The ear should always be gently syringed out with tepid water before using the powder. A few efficient applications will usually remove the unhealthy condition of the membrana, after which the discharge dependent upon it will subside. Unless other lesions are present, the hearing will still gradually improve.

On Chronic Ulcers.

Frederick C. Skey, Esq., F.R.S., etc., says, (*Lancet*) the more chronic the ulcer, the larger its size; the more aged the subject, the more remarkable is the influence of opium in effecting its cure. Treat such a case of chronic ulcer of the largest size, having a pale, flat, bloodless base, high mound of lymph around it, covered by unhealthy integument, the sore pouring out a large quantity of watery ichor, saturating the linen, stockings, and other appliances—I say, select such a case occurring in old age; give such a man ten or fifteen drops of tincture of opium night and morning, leave his bowels alone, and observe the base of the sore in five or six days; it will exhibit a number of minute red points, which, daily increasing in number, will rise up in the form and identity of healthy granulations, and cover the entire surface of the ulcer. Contemporaneously with the gradual elevation of the base of the ulcer is the descent of the surrounding eminence, and the commencement of the process of cicatrization. If I desired to select an ulcer, on behalf of a student, with a view to illustrate the character of perfect granulations as they appear in a thoroughly healthy example, I would select an ulcer which had been treated by opium in preference to any other. If it be supposed by any man having a limited experience in the employment of opium, that any evil to the constitution attaches to the use of that valuable agent, I can only reply that its salutary action on the ulcer is obtained solely through the healthy influence it exercises on the constitution. Judiciously employed, no drug in our pharmacopœia is more innocuous.

Chloroform.

In view of the difference of opinions in reference to the use of this agent as an anæsthetic, we are gratified to see the following from the *London Lancet*.

By slow degrees the true principles of inducing anæsthesia by chloroform with the least amount of risk are making their way in the metropolitan hospitals. At most hospitals now, but not we believe at all, the administration of chloroform is confided to the care of a competent and experienced person, specially appointed to that duty. The governors of Westminster Hospital have, at the instance of their medical officers, now wisely resolved to appoint such a person at their institution. At St. Mary's Hospital, also, where the question of the administration of chloroform has been under the consideration of a medical committee, it has been resolved not to continue in this respect the system which has hitherto been in force there, but to create a resident office for the chloroformist, so that his services may be more available in emergencies, as well as on the regular days of operation. At both hospitals, Mr. Clover's apparatus, which was the only one entirely approved by the Chloroform Committee of the Royal Medical and Chirurgical Society, has been recommended for adoption. It has for a long while been successfully used at University College Hospital, and we learn from Westminster Hospital, where it has now been for some time in full work, that the comfort and safety with which chloroformization can be performed, are found to be greatly increased by the use of this instrument. There can be no doubt in our mind that every hospital should be furnished with an apparatus of this kind, which is, to say the least of it, a very considerable protection against the evils which might result from the ignorance of the dressers and others who occasionally have to administer chloroform in an emergency, and in whose hands the use of the towel or handkerchief involves a great risk.

Trichina Spiralis.

The Sanitary Commission of India has been making an inquiry into a very curious subject. The nature of it will be best understood by the mention of an occurrence that lately happened. A stout and apparently healthy Englishman was admitted into the Calcutta Medical College, suffering from an undiscoverable disease. It was found that he had trichina in a tumour in his

neck, and he died. Tichiniasis is said to be rather common in India, and the great cause of it is diseased pork. The Sanitary Commission tell a revolting story of the way in which pigs and even sheep are fed in many parts of India. They get nothing but the most filthy description of offal, and then human beings eat the flesh and get trichina spiralis. Some of the details are so unpleasant as to forbid narration; but those who know India and the personal practices of the natives will understand the full force of this statement by DR. GORDON:—"In an incredibly short space of time after the villagers have left the field, it is as if they had never been there, while the herd by which the clearance has been effected may be found in some shady place near, or close to a tank, with a few of the more insatiable that have gone to hunt for dead dogs, cats, cattle, and Hindoos that have paid the debt of nature since the previous meeting, and have been thrown or left on the plain to be devoured by domestic animals or vultures." English people will find it hard to believe that flesh thus fattened is used for food, yet it causes no surprise here. The Sanitary Commission say:—"In more than one official report received by the Commission these habits of India pigs are spoken of with something like actual approval, and one officer appears to consider that by the regular employment of pigs the necessity for entertaining conservancy establishments for the removal of filth may be to some extent avoided." Sheep are fed in this manner also. It may be necessary to add that in many of the principal stations in India the Europeans are safe from this danger on account of the mutton clubs, which keep properly grain-fed sheep, and distribute the joints among the members. But in the large towns the servants buy meat in the bazaars without regard to what it has been fed upon. In a country where nature itself is always fighting against human life, we are obliged to live under conditions which would be thought utterly destructive in the most temperate regions of the globe. The food is bad, the water is bad, the air in the plains is like so much poison; the streets are foul with every kind of nuisance, drainage is impossible, the dead are left unburied, or just put an inch below the ground; and, in short, an army of hostile circumstances conspire against the health. The matter of food and drink has been taken up very warmly latterly, and that is owing, in a great measure, to the President of the Medical College, Dr. NORMAN CHEVERS. For years he has devoted attention to the subject, and often called attention to the magnitude of the evil; but all movement is slow in the East, and when it is stated that Calcutta has a municipality, it will be quite understood why so little good has been done, so few reforms carried out.—*Lancet.*

Idiopathic Hydrophobia in Man.

The Paris correspondent of the *London Lancet* writes to that journal that M. Girard de Cailleux, inspector-general of the different lunatic asylums for the Department of the Seine, at one of the last meetings of the Academy of Medicine, read a memoir entitled, "On Rabid Hydrophobia considered as a disease which can spontaneously develope itself in Man under the form of Acute Febrile Delirium," and from which I subjoin the following extracts:

1. If it be true that rabid hydrophobia is a virulent disease transmissible by inoculation from animals to man, it is equally true that it can develope itself, and does so more frequently than it is believed, spontaneously in man, under the form of acute febrile delirium, so frequent in lunatic asylums.

2. It then affects man in character which is proper to the species, just as other diseases which manifest themselves among animals take a peculiar character in each species, albeit the peculiar nature of the affection does not lose its identity.

3. The causes which produce rabid hydrophobia are, in the first place, a predisposition *sui generis;* and that a multitude of occasional causes, which by their great variety, often lead into mistake as to the true nature of the disease.

4. The similarity of the symptoms, of the progress, of the duration, of the termination, of the structural injuries, between rabid hydrophobia which is communicated, and acute febrile delirium, so often met with in lunatic asylums, establishes in these two affections an identity of nature worthy of the attention of pathologists, and destined to throw new light on such an interesting subject.

Medical Officers in the Navy.

The following is the number of medical officers in the Regular and Volunteer service in the Navy of the United States, as shown by the books on the 10th of February.

REGULAR NAVY.

Surgeons, (Active List) . . .	80
" (Retired List) . .	14
Passed Assistant Surgeons, (Active List)	20
" " " (Retired List)	4
Assistant Surgeons, (Active List) -	84
" " (Retired List)	5
	207

VOLUTNEER NAVY.

Acting Assistant Surgeons, . .	632
Total,	839

MEDICAL AND SURGICAL REPORTER.

PHILADELPHIA, MARCH 11, 1865.

THE STATUS OF THE MEDICAL PROFESSION IN THE GOVERNMENT SERVICE.

The status of our profession in the Government service has always been equivocal. In both the army and the navy there is a jealousy on the part of officers toward the surgeons and assistant surgeons lest their rank should, in any degree, assimilate with their own, and the influence of these men has heretofore been so potent that medical officers are now in both arms of the service occupying false positions, being subordinate in rank and pay to some of the lower grades of officers, while their duties place them in positions equally responsible with those of officers several grades higher in position and pay. In the navy the position in which the medical officers are placed is so unpleasant, and the pay so inadequate, that it has for some time been very difficult for the Government to get a supply adequate to the wants of the service.

So also in the army, the rank and pay are so low that the same difficulty is experienced, and the Government has lately been obliged to resort to the expedient of advertising for contract surgeons, and then announcing that if for a certain length of time they serve in that capacity with satisfaction, they will be commissioned *without an examination!* In fact, the policy of the Government toward our profession in both branches of the service is well calculated to prevent men of superior ability and attainments from seeking positions in the service, while it on the other hand encourages inexperienced men, and men of limited acquirements, to seek such positions. On this account many of the most able and experienced surgeons in the service are daily compelled to resign their positions, while others, from motives of patriotism, retain theirs at considerable personal sacrifice both of feeling and interest.

The New York *Daily Times* had some very excellent remarks lately on the rank of Medical Directors in the army. It says that popular ignorance "culminates respecting the Medical Department, whose claims are seldom heard outside the profession, and whose members are generally overlooked in the distribution of honors and recognition of services. Nor is it alone popular recognition that is not awarded; legislative enactment has been tardy to admit its claims to position. At the last session of Congress the House passed a bill giving Medical Directors of corps the temporary rank of Lieutenant-Colonel, and those of departments or armies, of Colonel. But it was only yesterday that the Senate found time to act upon it. This lukewarmness appeared to flow from non-appreciation. Senators, as well as civilians generally, were forgetful that the word 'surgeon,' in its literality, does not completely describe him who bears it. A surgeon is more than simply such—is more than a giver of medicine and operator for wounds. It is his province to prevent disease, as well as to alleviate suffering, and upon the medical officer of a regiment rests, under the Colonel, the immediate responsibility for its sanitary condition.

"Naturally and necessarily the medical officer's duties increase as he rises in the army scale, and in the position of a Director they are complex and important to a degree rarely understood by the uninitiated. However, while other officers and other departments receive recognition by increased rank as their duties extend, the Medical Department has been uniformly ignored. The common argument is, 'Doctors have no need of rank.' Very true, subjectively. Rank creates in no man any intrinsic difference. But they beg the question who make the answer quoted. As all commissioned surgeons are more than doctors—are medical officers—in like manner a Director should be an officer of rank. He embraces, but exceeds the province of a surgeon. Medical men in the army hold a double position. Superadded to their professional are their official relations; and this official character is a necessity. It is neither to gratify their vanity nor to nourish their pride, but is demanded by the service.

"By what reason was it, then, that when experience had shown the health-officer of a regiment should rank as a Major, he who is responsible for the well-being of the whole command, to whom several hundred of these officers report, and upon whose management often depends the efficiency of an entire army, should be of no higher grade?

"A Director is such literally. To professional acquirements must be joined military knowledge—not that of tactics or drill, but of the principles of discipline, of the requirements of the statute law of regulations and the common law of the custom of service. He must not only be competent to indicate modes of treatment, but must appreciate and anticipate the wants of the army. In other words, to be a competent Director, he must possess a technical education—an education of practice as well as of books—an aptitude for the field as well as soldierly *esprit*.

"The Medical Corps can lay just claim to equal ability with any body of men holding position in the army, As long as their pay—as is a notori-

ous fact—is but a fraction of what their private practice would be, and covers, as in most instances, but a part of their expenses, they can fairly claim to be equally patriotic with their comrades. No other class is more continuously 'on duty,' has so much individual responsibility in its performance, or is so seldom regarded in its reward. It is very unequal justice that offers a Major's position in return for certain service, and refuses a higher grade for responsibility ten-fold as heavy."

There is also a feeling of prejudice on the part of regimental, division, and corps officers against their medical officers, which often militates against them. A case recently came under our notice in which an intelligent surgeon was, on some technical point, court-martialled and dismissed the service in disgrace. He was, in fact, hastily condemned, almost without a hearing, on the very inadeqate evidence of some stragglers, which was in some essential particulars utterly false. He succeeded, however, in having the case reviewed, the order of dismissal was rescinded, and he was reappointed to his former position. On presenting himself, however, to enter upon duty, he found that the position would be rendered uncomfortable by the implacable hostility of his division commander, and he threw up his commission, and returned home.

This narrow policy toward medical officers is driving many of the most capable out of the service. Our brave soldiers should have the best medical talent that can be secured, and that can only be had permanently, by pursuing a more liberal and enlightened policy toward our profession, and giving them a less equivocal standing in the service.

MEDICAL COLLEGE COMMENCEMENTS.

The close of the lecture season having arrived, the Medical Colleges in various parts of the country are holding their annual "Commencements," and sending forth their graduates. The schools have been full this season, and the number of graduates is large. In fact, all the schools are rapidly approaching their old ante bellum standard in regard to numbers of matriculants and graduates. The

MEDICAL DEPARTMENT OF THE UNIVERSITY OF NEW YORK

Held its commencement on Friday evening, March 3d, at the Chapel of the University, a large audience, as usual, being present. The proceedings were opened with prayer by the venerable Chancellor of the University, Rev. Dr. FERRIS, and by reading the Scriptures. The proceedings were diversified by music.

The graduates were sixty-two in number, as follows:

Massachusetts—Wm. W. Gardner, Benjamin Gilpatrick, Jr.

Connecticut—John F. Fox, Owen J. Ward.

New York—Chas. S. K. Baily, Orville L. Barney, Daniel J. Brennan, Wm. C. Brownson, Harry T. Chamberlin, Joseph O. Clark, Gregory Doyle, Edwin A. Fobes, Cornelius Hustis, Wm. B. Lewis, Alex'r F. Liantard, Chas. H. Ludlum, Wm. McManus, Augustus W. Maclay, Gaius H. Nash, Phillip O'Hanlon, Jr., Michael C. O'Toole, Clarence Ormsbee, C. Newell Palmer, Henry C. Palmer, Wm. H. B. Post, Adolphe Schlosser, Geo. Seymour, Amos K. Smith, Franklin Smith, Daniel W. Teller, Francis A. Utter, James Van Brakle, David Warke, John J. Ward, Henry T. Willock, Theodore G. Wright, W. Jay Youmans—33.

New Jersey—John C. Moore, Joseph S. Sutphen, Stephen W. Van Duyn.

Pennsylvania—Edwin S. Dorworth, Thomas H. Doyle, Gustav T. Fox, Thomas C. Rhoads, Geo. Rozenberger, Joseph P. Webb, Robert H. White—7.

Kentucky—Chas. W. Neely.

Tennessee—Owen V. Brown, Robert T. Bush.

Missouri—Thomas Kimlin.

Illinois—John Fee.

Michigan—Arthur K. St. Clair.

British Possessions—John Bell, Michael J. Coholan, James Ferguson, Oscar F. Hoyt, W. H. Price, Alex'r P. Reid—6.

West Indies—Antonio V. G. Aguire, Gaetana Conforto, Antonio R. Gonzales.

The prizes were awarded as follows:

Prof. Mott's gold medal for best dried anatomical preparations, to Mr. Jules G. Durant, N. Y.

Silver medal for second-best dried anatomical preparation, to Mr. Lewis R. Lamport, N. Y.

Bronze medal for best book of recorded cases of clinics or record of lectures, to John A. De Hart, N. J.

Prof. Metcalf's, for the best reports of his clinics—1st, to Dr. John F. Fox, Conn., post-mortem case of instruments; 2d, to Mr. Whitmer Snively, Pa., a case of pocket instruments.

Prof. Van Buren's, for the best anatomical preparation, to Dr. Alex. F. Liantard, N. Y., an amputating case.

The Valedictory was read by Prof. Draper.

Notes and Comments.

Valuable Invention in Dentistry.

We see noticed what purports to be a valuable invention in dentistry by a New York dentist. It is a contrivance by which the old cumbrous plate is dispensed with, and at the same time, the teeth are still more firmly secured in their place than has heretofore been possible. This is effected by a

peculiar arrangement of air-cells for applying the force of atmospheric pressure along the entire length of the socket which rests upon the gums. Also, in making the plate, a "reticulated gold web and rubber base" is used, so that perfect firmness is obtained, with the valuable advantages of an extreme thinness, lightness, and elasticity, of the plate. Persons who have tried both the old and new inventions, speak in the most enthusiastic praise of the superiority of the latter—of its lightness in the mouth; the little space it occupies not interfering with speech or taste in the least; the ease with which it is adjusted, and the perfectness of the adhesion. Its greater naturalness, beauty, and neatness of external appearance, are obvious to every one at a glance.

This is what is claimed. If the claim is a valid one, and the inventor is actuated by a proper spirit, it will not be long before the dental profession and the public in general will share in the benefit of it.

New York Infirmary for Women and Children.

The "New York Infirmary for Women and Children" has long been under the professional care of Drs. Elizabeth and Emily Blackwell, who have been thoroughly educated in legitimate medicine, having availed themselves of the best advantages afforded by the schools and hospitals of this country and Europe. Drs. Valentine Mott and Willard Parker are the consulting Surgeons of the Infirmary. The report for 1864, just issued, shows that during the last year 5437 persons were relieved. The last legislature of New York enlarged the charter of the Infirmary so as to confer Collegiate powers upon it, and an effort is being made to endow a Woman's Medical College in connection with it. The effort to introduce women into the medical profession has not thus far been very successful, and leads to grave doubts whether there is a real demand for them, but if we are to have women practitioners of medicine, it is certainly very desirable that they should be properly educated. Most of the attempts to educate women in this direction have been in connection with hybrid schools, where everything but legitimate medicine is taught. We are not, however, we confess, of those who think that the medical profession is exactly a legitimate sphere for woman's usefulness.

Mortality of Prisoners of War.

The statistics of military-prison life on Johnson's Island, where 7771 rebel prisoners have been received during the last two years, show a mortality of only 210, or little more than 2¼ per cent. The per centage of deaths among our prisoners confined at Salisbury, North Carolina, was more than nine times greater. That is, it reached to about one-fourth of the entire number.

☞ The record of the Reporter on irregular practitioners and schools of medicine is too well known to need defining here. We need therefore only say, that had we known the status of the author of a communication that appeared in No. 412, current volume, on the treatment of Dropsy by Urea, it would not have found a place in our columns.

There were four hundred and twenty-two Matriculants in the Medical Department of the University of Pennsylvania during the session just closed.

The whole number of sick and wounded in the different military hospitals throughout the country on the 31st of January last was a little over seventy-nine thousand.

Correspondence.

DOMESTIC.

OBSERVATIONS ON SMALL-POX.

A Child in Utero with Small-Pox.--Mother saved by Vaccination.

Editor Med. and Surg. Reporter:—

Dr. Wilson's paper in No. 415 of the Reporter suggests to me that the report of a striking case of the extent of the protection of vaccination might possibly prove interesting to some of your readers.

4th April, 1857. Mr. B., æt. 27., an employee of the Central Ohio Railroad, consulted me at my office, about himself. Had a violent pain in the head, back-ache, soreness all over him, fetid breath, tongue heavily coated, with some fever. Called next day. No better.

6th. Visited him and found small-pox eruption coming out on his face and neck. There were seven persons in his household. The house was one in a row of wooden buildings, very small, the lot descending to the front, and altogether a very unpromising place for small-pox. His own household were all vaccinated, as were the families next door, each way.

Mr. B's case progressed favorably, and he recovered. The family all took vaccination well. Neither of them had small-pox or varioloid, except a little stranger, still unborn. It is my impression

that the family were all unprotected by vaccination up to that time. The disease did not spread from his case.

Mrs. B. came to her confinement on the 3d. of May following, and after an easy labor, was delivered of a well-developed male infant, covered with confluent small-pox at about the ninth or tenth day of the eruption. The child lived but a short time. The mother had a good getting up; is still living in the city; and has been delivered several times since.

This is not a new case, or a new fact. Similar cases are mentioned by several authors, whose volumes are in my library. Its interest is in the fact that the parties are still living, and the case of recent occurrence.

Pitting Prevented.

As pertinent to the subject, mention may be made of a case of small-pox, in my practice in 1863, in which my efforts to avoid pitting were entirely successful.

Michael M., æt. 12. Sickened March 15, 1863. Small-pox appeared next day. Michael lived with a brother-in-law, whose family occupied the rooms over his place of business, in the most compact part of the city. He was moved to an out of the way room, and thus completely isolated. This family had all been vaccinated, which took well. Michael was vaccinated, but no effects were observed on him. Two sisters took care of Michael, and by my directions they ruptured each pock on his face and neck with shoemaker's awls, twice or more daily, during the maturative period. His face was kept moistened with a lotion of oil of almonds, with one drachm of strong mercurial ointment to two ounces of oil, applied by camel's hair brushes. Michael's sisters did their duty faithfully, and he had a good recovery, and at the end of the fourth week his face was entirely natural in color, with little or no trace of his disease visible, even when closely scrutinized.

Michael's parents lived about fifteen miles distant in the country, and he was anxious to go home. His friends allowed him to go about the end of the fifth week, contrary to my advice. A brother and sister took the small pox, and quite a number of cases occurred in the neighborhood.

At this time Michael's face shows no traces of small pox. His hands and body are marked as usual. Every pock not persistently ruptured shows a pit.

Susceptibility to Vaccinia.

Observations in the cities of Zanesville and Newark, central Ohio, extending over a period of nearly twenty years, leads me to the following general results in regard to the susceptibilities of human beings to the vaccine disease, and its protection against itself. No opportunity has been afforded me to test the susceptibilities of the second and third class to small pox. Only protected by vaccination myself, and attending small pox cases throughout my professional life, no re-vaccination has been successful, nor have any symptoms been developed by attention to small pox patients in my own person. Place me in Class No. 1. No difficulty will be encountered in placing any human being in one or other of the three classes. They are,

Class 1. Persons who cannot be infected a second time by vaccination.

Class 2. Persons who will take re-vaccination at long intervals, say from ten to fifty years, the disease going through its regular stages apparently uninfluenced by previous vaccination.

Class 3. Persons who will take vaccination at all times, going through the different stages regularly, though their aggregate length is shorter by several days than the first infection.

This differs much from the results of other observers in this country and in Europe, but my classification is so simple and natural, and covers so completely the whole ground, that it cannot vary much from the actual facts in all cases.

Z. C. McElroy, M. D.

Zanesville, Ohio, March 4, 1865.

News and Miscellany.

Dr. Brown Sequard.

We learn from a recent number of the *Dublin Medical Press*, that Dr. Brown Sequard recently delivered a lecture on the Pathology and Diagnosis of the diseases of Nervous Centres, before the King and Queen's College of Physicians, during his visit to that city. Much interest was excited by the performance of a very formidable operation under the advice of that gentleman. The operation—excision of a portion of one of the vertebræ in a case of partial dislocation of the spine from injury—was performed by Dr. Robert Macdonnell in Jervis Street Hospital. In view of the certainty of death as the only remaining alternative, it was determined to endeavor to relieve the symptoms of paralysis by operation. The vertebra, which was low down in the dorsal region, was, we believe, found to be twisted and compressing the chord, and portions of the laminæ were removed. Up to the present time, we understand that a slight improvement in motive power, or in the incontinence of urine and fæces, has resulted.

Preservation of Lemonade.

The spontaneous change which this liquid undergoes, and the early deposition of a granular salt, when prepared in a concentrated form, prevents its being kept longer than a few days. In the *Schweiz. Zeitsch. F. Ph.* it is suggested by M. Ladi to employ the sulphite of magnesia as a means of preserving it for a longer time; the gradual oxydation by which it becomes converted into the sulphate of magnesia appearing to prevent the alteration. A small quantity only is said to be sufficient.—*Amer. Jour Phar.*

Benzine as an Insecticide.

It is stated by Gille in the *Bull. de Ph. de Brux.* that a mixture of benzine ten parts, soap five parts, and water eighty-five parts, has been long used by him to destroy the parasites which infest dogs. It has been used with good results in veteterinary practice, as an application in certain diseases of the skin; and thus diluted is found to answer better than when used pure.—*Amer. Jour. Phar.*

[We have ourselves used it with gratifying success in Scabies—and where warm water is thoroughly used to remove the impenetrable scab protecting the parasite—a few applications of the pure benzine will effectually destroy the *acarus*. The ready mode of application and freedom from disagreeable odor will at once commend its use in preference to sulphur and allied preparations.]

Union of Wounded Nerve.

M. Langier, of the Hotel-Dieu, communicated to the Acadamy of Sciences a case of laceration of the soft parts of the arm, in which he had brought together and ligatured the torn ends of the median nerve. No bad consequences followed the operation. On the evening of the day of the operation, sensibility was partially restored; on the following day, it was much increased.

Cure of Aneurism by Extirpation of Sac and Ligature.

At the Academy of Medical Sciences at Lyons, M. Ollier presented a specimen of an arterio-venous aneurism at the bend of the elbow, which had been cured by extirpation of the sac and ligature of the ends of the artery. Compression, applied before the operation, had prepared the way for a ready establishment of a collateral circulation.

Bitten by Animals.

In 1863, at Milan, 123 persons (98 men and 25 women) presented themselves at the hospital, having been bitten, 113 of them by dogs, and 10 by other animals. The bites were far the most frequent during the hot months of the year. Thus, between April and September there were 83 cases, and 40 in the other months. A complete statistical account of these cases is given in the *Annali Univ. di Medic.*

Army and Navy News.

ARMY.

ASSIGNMENTS.—Surgeon Joseph C. Baily, U. S. A., to duty as a member of the Board of Enrollment at Baltimore, Md.

Assistant Surgeon Thomas H. Helsby, U. S. A., on the reporting of his relief, Assistant Surgeon Baily to relieve Assistant Surgeon R. F. Weir, U. S. A., as Surgeon in charge of the General Hospital, Frederick City, Md.

Surgeon T. M. Getty, U. S. A., relieved from duty as Acting Medical Inspector of Prisoners, and ordered to duty in the Middle Department.

Hospital Steward Charles Reiss, U. S. A., is hereby relieved from duty in the Department of the South, and ordered to duty with the Medical Director, Department of the Northwest.

Hospital Steward H. D. Wagner, U. S. A., is hereby relieved from duty in the Department of Missouri, and ordered to duty with the Medical Director, Department of the Mississippi, at Memphis, Tenn.

Hospital Steward William Schultz, U. S. A., is hereby relieved from duty in the Medical Department, and ordered to report to the Surgeon-General U. S. A., for duty.

Assistant Surgeon Edward Brooks, U. S. A., has been relieved from duty in the Army of the Potomac, and ordered to report to the Medical Director, Department of the East, for duty in his office.

NAVY.

Regular Naval Service.

DETACHED.—Surgeon Henry O. Mayo, from the *Powhattan*, and awaiting orders.

APPOINTMENT.—John Paul Quin, Surgeon from December 30, 1864.

Volunteer Naval Service.

ORDERED.—Act'g Ass't Surgeon Edgar S. Smith to the *Constellation*.

DETACHED.—Act'g Ass't Surgeon Henry Shaw, from the *Ohio*, and ordered to the *Maratanza*.

Act'g Ass't Surgeon John W. Hamilton, from the *Maratanza*, and placed on sick leave.

APPOINTED.—Philip James Gilbert, of the West Gulf Squadron, Act'g Ass't Surgeon, and ordered to remain in that Squadron.

William Hiram Faxon and Edward Macomb, of New York Act'g Ass't Surgeons, and ordered to the *North Carolina*.

MARRIED.

SAUNDERS—CAMERON.—By Rev. M. L. Anderson, January 6th, in Millersburg, Ohio, Edwin G. Saunders, M. D., and Miss Rebecca S. Cameron.

WERTS—PERDUE.—Feb. 21, by Rev. J. A. De Moyer, Mr. William B. Werts, of Pine Grove Mills, and Elizabeth R., daughter of Dr. Perdue, of Half Moon, Pa.

WICKES—WHALAND.—Jan. 4, by Rev. L. W. Bates, Captain Charles H. Wickes and Miss Henrietta Whaland, daughter of Dr. Whaland, of Chestertown, Md.

DIED.

REED.—In Iberia, Ohio, Jan. 9th, of croup, Lucy, youngest child of Dr. William and Mrs. Mary Read, aged 4 years.

METEOROLOGY.

February	27,	28,	M. 1,	2,	3,	4,	5,
Wind	E.	N. E.	N. E.	N. E.	E.	S. W.	N.
Weather	Cl'dy.	Cl'dy.	Cl'dy.	Cl'dy. Rain.	Cl'dy. Rain.	Cl'dy. Rain.	Clear.
Depth Rain						1 5-10	
Thermometer.							
Minimum	35°	32°	31°	32°	33°	35°	30°
At 8 A. M.	41	35	35	35	38	44	31
At 12 M.	45	36	41	40	42	48	36
At 3 P. M.	47	37	41	37	45	49	39
Mean	42.	35.	37.	36.	39.50	44.	34.
Barometer.							
At 12 M.	30.4	30.4	30.4	30.5	30.1	29.7	30.1

Germantown, Pa. B. J. LEIDY.